

FIG. 1

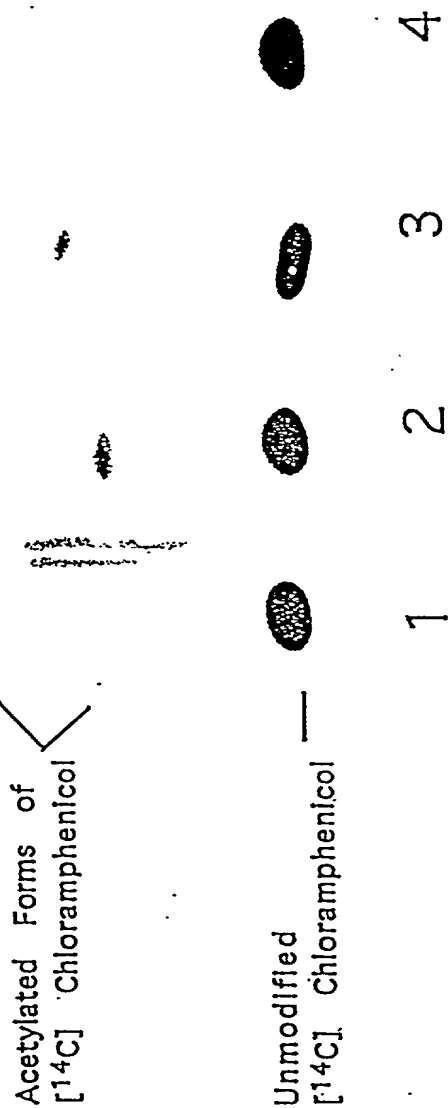


FIG. 2

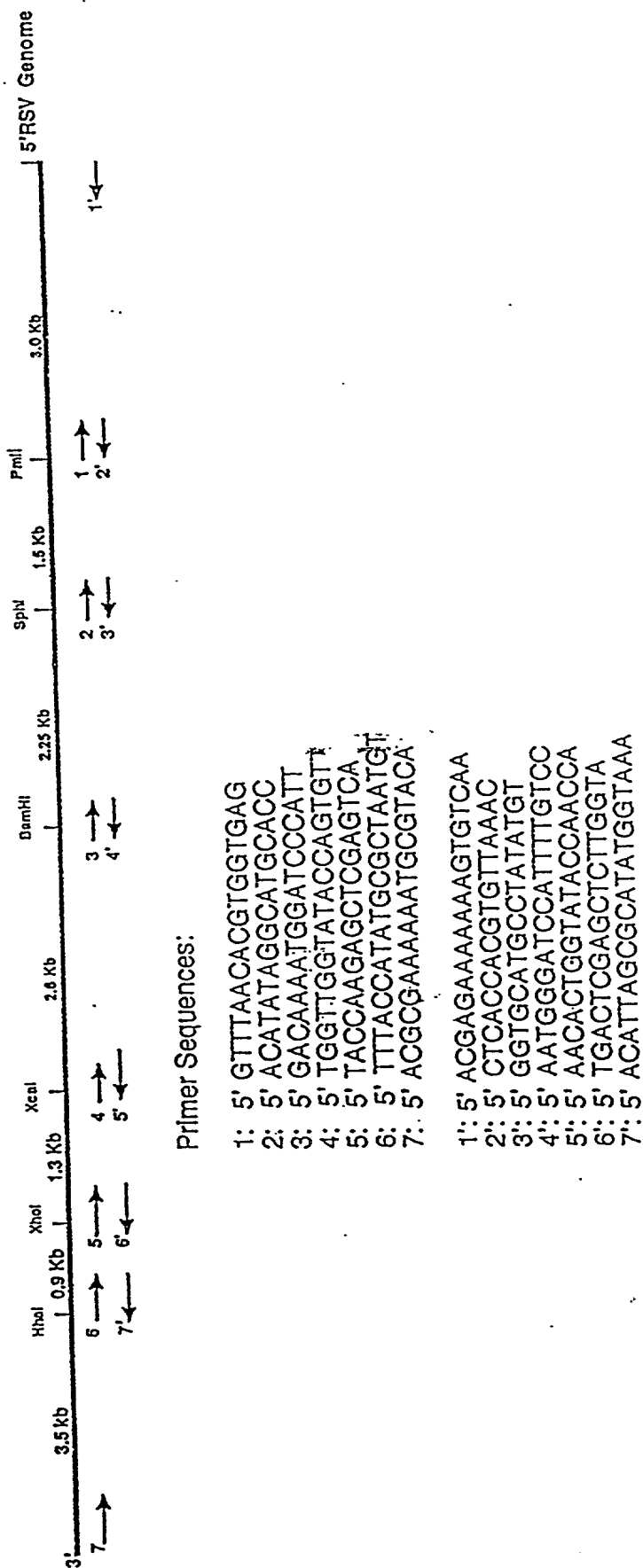
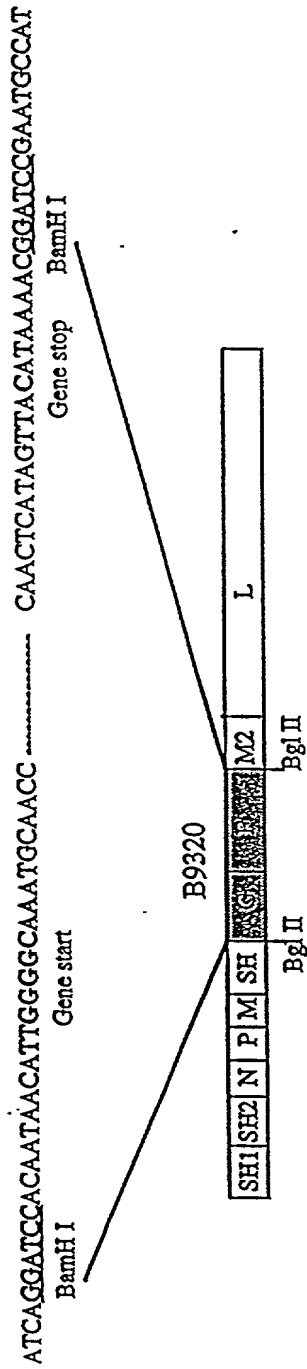
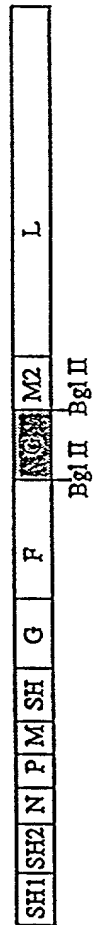


FIG. 3

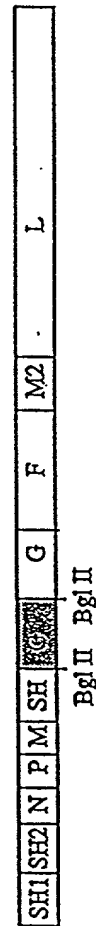
## A. RSVB-GF



## B. RSVB9320G-F/M2



## C. RSVB9320G-SH/G



FIGS. 4A-C

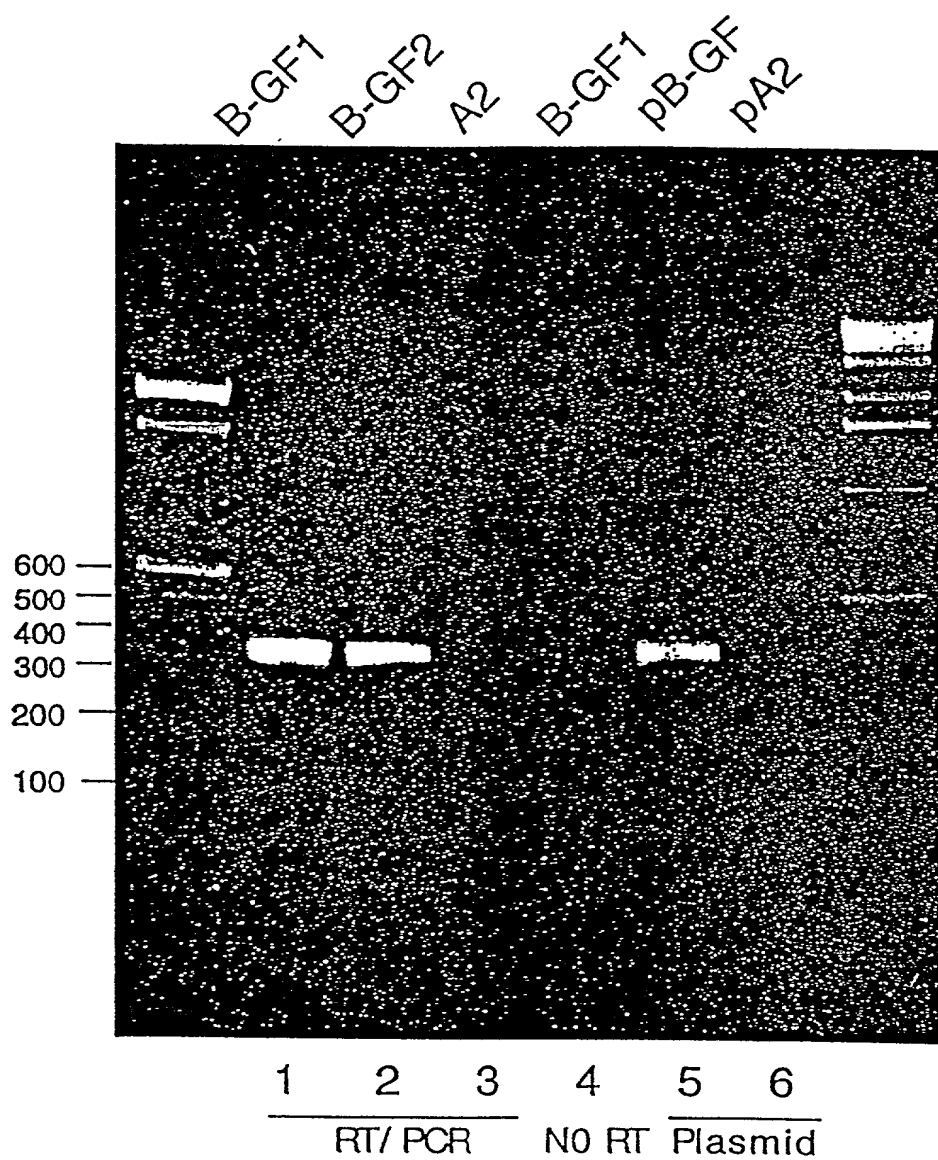
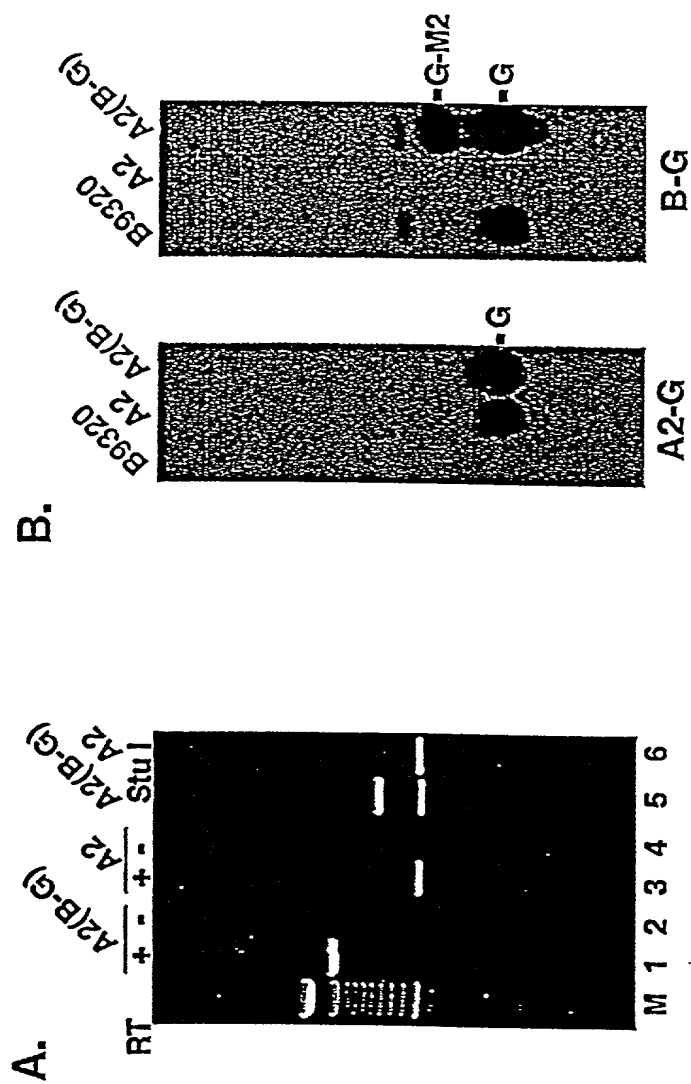


FIG. 5



FIGS. 6A-B

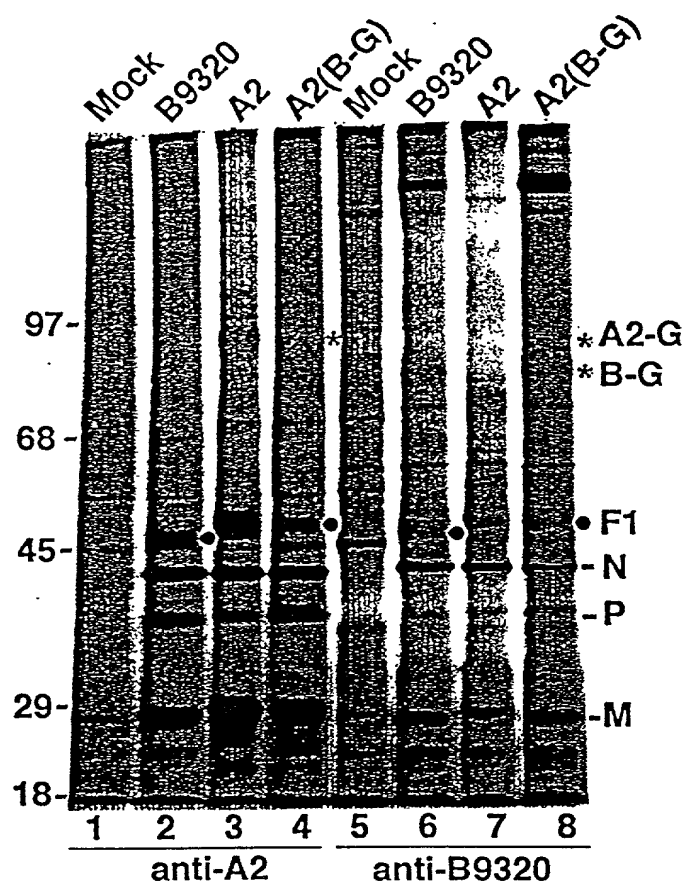


FIG. 7

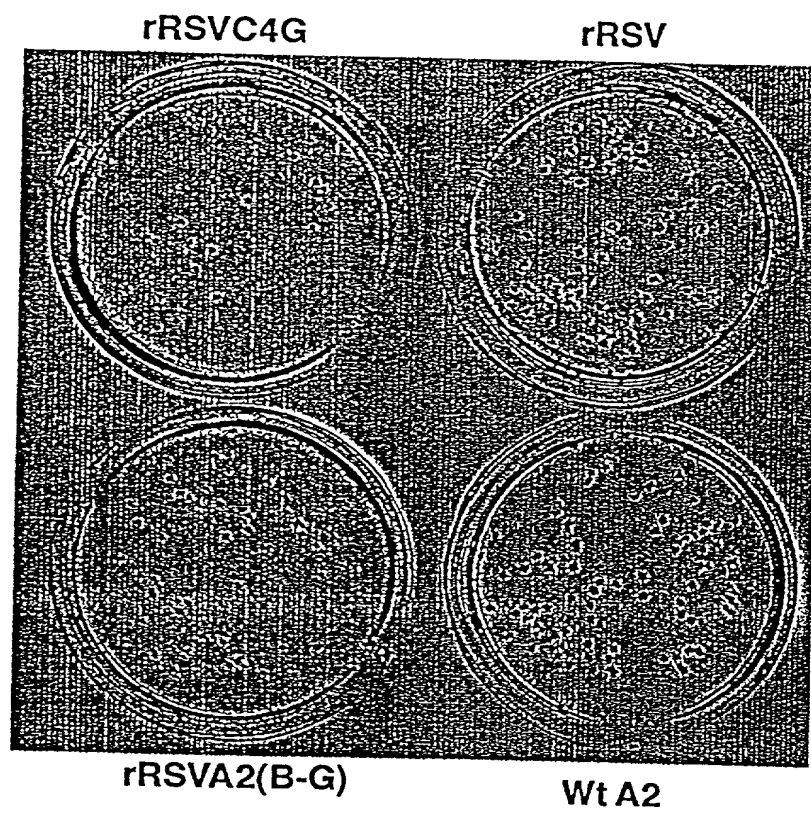


FIG. 8



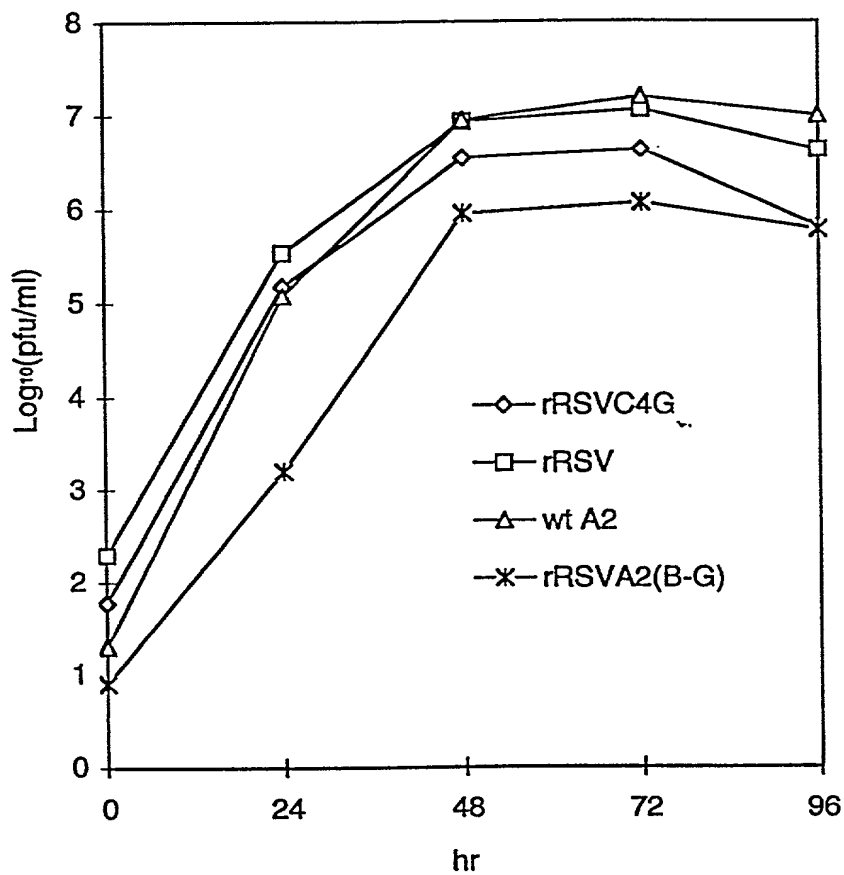


FIG. 9

MDPTINGNSANVYL T DSYLKGVISFSECNA LSYIFNGPYLKN Y TNLSRQNP LIEH MN LKKNITQSLISKYH 75  
 KGEIKLEPTFYQSL LMTYKSMTSSEQIAT TNLKIKIIRRAIEIS DVKVYAILNKLGLKE KDKIKSNNGQDEEDNS 150  
 VITTIKDDILSAVK DNQSHLKADKNHSTK QKDTIKTTLLKLMC SMQHPPSWLIHWFNL YTKLNNILTQYRSNE 225  
 VKNHGFTLIDNQTLG GFOFILNQYGCIVYH KELKRITVTYNYQFL TWKDISLSRLNVCLI TWISNCLNTLNKSLG 300  
 LRCGFNNVILTQFL YGDCILKLFHNEGFI IIEKEVEGFIMSLIIN ITEEQDFRKRFFYNSM LNNITDAANKAQKNL 375  
 LSRVCHTLDDKTVD NIIINGRWIILLSKFL KLIKLAGDNNLNLS ELYFLFRIFGHEMVD ERQAMDAVKINCNET 450  
 KFYLLSSLSMLRGAF IYRIIKGFVNYNRW PTLRNAIVPLRLWLT YYKLNTYPSLLELTE RDLIVLSGLRFYREF 525  
 RLPKVDLEMIINDK AISPKNLIWTSFPR NYMPSHIQNYIEHEK LKFESEDKSRRLVLEY YLRDNKFNEDLYNC 600  
 VVNOQSYLNNPNHVS LTGREREL SVGRMFA MQPGMFRQVQILA EK MIAENILQFFPESLT RYGDLELOKILELKA 675  
 GISNKSRYNDNVNN YISKCSITITDLSKEN QAFRYETSICISDVL DELHGVQSLFSWLHL TIPHVTTICTYRHAP 750  
 PYIGDHIVDINNVE QSGLYRYHMGGIEGW CQKLWITIEAISLIDL ISLKGKFSITALING DNQSIDISKPIRLME 825  
 GQTHAQADYLLALNS LKLLYKEYAGIGHKL KGTETYISRDMQFMS KTIQHNGVYYPASIK KVLRVGPWINTILDD 900  
 FKVSLESIGSLTQEL EYRGESLLCSLIFRN VWLYNQIALQKNHA LCNNKLYLDILKVLK HLKTFEFLDNIDTAL 975  
 TLYMNLPMLEGGDP NLLYRSFYRRTPDFL TEAIVHSVFILSYT NHDLKDKLOLSDDR LNKFLTCTIITFDKPF 1050  
 NAEFVTLMRDPQALG SERQAKITSEINRLA VTEVLSTAPNKIFSK SAQHYTTTEIDLNDI MQNIEPTYPHGLRVV 1125  
 YESLPFYKAEKIVNL ISGTSITTNILEKTS AIDLTIDDRATEMMR KNITLLIRILPLDCN RDKREILSMENLSIT 1200  
 ELSKYVREBSWSLSN IVGVTSPSIMYTMDI KYTSTISSGILIEK YVNSLTTRGERGPTK PWVGSSTQEKKTMPV 1275  
 YNRQVLTKKQDQID LLAKLDWVYASIDNK DEFMEELSIGTLGLT YEKAKKLFPPQYLSVN YLHRLTVSSRPCEFP 1350  
 ASIPAYRTTYNYHEDT SPINRILTEKYGDED IDIVFQNCISFGLSL MSVVEQFTNVCPNRI ILIPKLINEIHLMKPP 1425  
 IFITGDVDIHLKQVI QKQHMFLPDKISLTQ YVELFLSNKTLKSGS HVNSNLILAHKISDY FHNVTYILSTNLAGHW 1500  
 ILTIQIMKDSKGIFE KDWGEGYITDHMFIN LKVFENAYKTYLLCF HKGYGKAKLECDMNT SDLLCVLELIDSSYW 1575  
 KMSKVFLQEKVIKY ILSQDASLHRVKGCH SFKLWFLKRLNVAEF TVCPWVNVNIDYHPTH MKAILTYIDLVRMGL 1650  
 INIDRIHIKNKHKN DEFYTSNLFYINYNF SDNTHLLTKHIRIAN SELENNYNKLYHPTP ETLENILANPIKSND 1725  
 KKTLDNDYCIGKNVDS IMLPLLSNKKLIKSS AMIRTNYSKQDLYNL FPMVVIDRIIDHSGN TAKSNQLYTTTSHQI 1800  
 SLVHNSTSLYCMPLW HHINRFNFVFSSTGC KISIEYILKDLKID PNCIAFIGEGAGNLL LRTVVELHPDIRYIY 1875  
 RSLKDCNDHSLPIEF LRLYNGHINIDYGEN LTIPATDATNNIHW S YLHIKFAEPISLFVC DAELSVTVNWSKIII 1950  
 EWSKHVRKCKYCSSLV NKCMLIVKYHAQDDI DFKLDNITILKTYVC LGSKLKGSEVYLVLT IGPANIFFPVFNVQN 2025  
 AKLILSRTKNFIMP KADKESIDANIKSLI PFLCYPITKKGINTA LSKLKSVVSGDILSY SIAGRNEVFSNKLIN 2100  
 HKHMLNLLKWFNHVILN FRSTELNYNHLYMVE STYPYLSELINSLTT NELKKLIKITGSLLY NFHNE 2165

Charged. Clusters (Amino Acids that are underlined were changed to alanines)  
 Mutations in cpts-248/404  
 Mutation in cpts530

FIG. 10

MDPIINGNSANVYLT DSYLKGVISEFECNA LGSYIFNGPYLKNDY TNLISRQNPPLIEHMN LKKNITQSLISKYH 75  
 KGEIKLEETPYFQSL LMTYKSMTSSEQIAT TNLLKIIIRRAIEIS DVKVYAILNKLGLKE KDKIKSNNGQDEDNS 150  
 VITTIKDDILLSAVK DNQSHLKADKNHSTK QKDTIKTTLLKKLMC SMOHPSPSWLIHWENL YTKLNNILTQYRSNE 225  
 VKNEGFTLIDNQTLG GFQFIINQYGCIVYH KELKRITVTYTNQFL TWKDISLSRLNVCLI TWISNCLNTLNKSLG 300  
 LRCGENNVILLTQLFL YGDCILKLFHNEGFI IIKEVEGFIMSLIIN ITEEDQFRKRFRYNSM LNNITDAANKAQKNL 375  
 LSRVCHTLDDKTVD NIINGRWIILLKFL KLKLAGDNNNLNLIS ELYFLFRIFGHPMVD ERQAMDVAVKINCNET 450  
 KFYLLSSLSMLRGAF IYRIIKGFVNYYNRW PTLRNAIVLPLRWLT YYKLNTYPSLLELTE RDLIVLSGLRFYREF 525  
 RLPKKVDLEMIINDK AISPPKNLIWTSFPR NYMPSHIQNYIEHEK LKFSSEDKSRRLVLEY YLRDNKFNECDLYNC 600  
 VVQSYLNNPNHVS LTGKERELSVGRMFA MQPGMERQVQILAEK MIAENILQFFPESLT RYGDLELQKILELKA 675  
 GISNKSRYNDNYNN YISKCSIIITDLSKEN QAFRYETSCICSDVL DELHGVQSLFSWLHL TIPHVTIICTYRHAP 750  
 PYIGDHTVDLNNVDE QSGLYRYHMGGLIEGW CQKLWTTIEAISLLDL ISLKGKFSITALING DNQSIDISKPIRLME 825  
 GQTHAQADYLLALNS LKLLYKEYAGIGHKL KGTEYTSRDMQFMS KTIQHNQVYYPASIK KVLRVGPWINTILDD 900  
 FKVSLESIGSLTQEL EYRGESLLQSLIFRN VMLYNQIALQKNAHA LCNNKLYLDILKVLK HLKTFNLDNIDTAL 975  
 TLYNNLPMLEGGGDP NLLYRSFYRRTPDFL TEAIVHSVFILSYTT NHDLDKLDLQDLSDDR LNKFLTCTIITFDKNP 1050  
 NAEFVTLMRDPQALG SERQAKITSETNRLA VTEVLSTAPNKIFSK SAQHYTTTEIDLNDI MQNIEPTYPHGLRVV 1125  
 YESLPFYKAEKIVNL ISGTSITNILEKTS AIDLTDIDRATFEMMR KNITLLIRILPLDQCN RDKREILSMENLSIT 1200  
 ELSKYVRERSWSLSN IVGVTSPSIMYTMDI KYTTSTISSGIIIEK YNVNSLTRGERGPTK PWVGSSTQEKKTMPV 1275  
 YNRQVLTQKQDQID LLAKLDWVYASIDNK DEFMEELSIGTLGLT YEKAKKLFPOYLSVN YLHRLTVSSRPQEPF 1350  
 ASIPAYRTTNYHFDT SPINRILTEKYGDED IDIVFQNCISFGLSL MSVVEQFTNVCPNRI ILIPKLINEIHLMKPP 1425  
 IFTGDDVDIHLKQVI QKQHMFLPKISLTQ YVELFSLNKTLLKSGS HVNSNLIILAHKISDY FHNTYILSTNLAGHW 1500  
 ILIIQLMKDSKGIFE KDWGEGYITDHMFN LKVFENAYKTYLLCF HKGYGKAKLECDMNT SDLLCVLELIDSSYW 1575  
 KSMKVFLEQKVIKY ILSQDASLHRVKGCCH SEKLFELKRLNVAEF TVCPWVVNIDYHPTH MKAILTYIDLVRMGL 1650  
 INIDRIHIKNKHEN DEFYTSNLFYINYNF SDNTHLLTKHIRIAN SELENNYNKLYHPTP ETLENILANPIKSN 1725  
 KKTINDYICIGKNVDS IMLPLLSNKKLIKSS AMIRTNYSKQDLYNL FPMVVIDRIIDHSGN TAKSNQLYTTTSHQI 1800  
 SLVHNSTSLYCMLPW HHINRNFVFSSTGC KISIEYILKDLKIKD PNCFIATIGEGAGNLL LRTVVELHPDIRYIY 1875  
 RSLKDCNDHSLPIEF LRLYNGHINIDYGEN LTIPATDATNNIHS YLHIKFAEPIISLFVC DAELSVTVNWSKII 1950  
 EWSKHVRKCKYCSSLV NKCMLIVKYHAQDDI DFKLDNITILKTYVC LGSKLKGSEVYLVLT IGPANIFPVFNQQN 2025  
 AKLILSRKQNFIMPK KADKESIDANIKSLI PFLCYPITKKGINTA LSKLKSUVSGDILSY SIAGRNEVFSNKLIN 2100  
 HKHMMILKWFENHVLN FRSTEINYNHLYMVE STYPYLSELNLSLT NELKKLEKITGSLLY NFHNE 2165

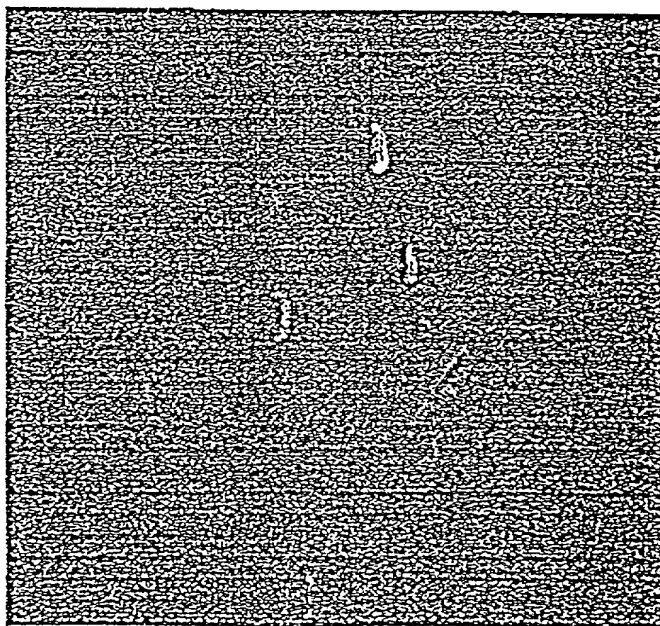
C Cysteine residues

C Cysteine residues that were changed to valine or aspartic acid

C Cysteine residue deleted

FIG. 11

	-SH	SH	-M2-2	M2-2
RT	+	+	+	+



**FIGS. 12A-B**